

Q2 dependent on the speed carrier recombination for light emission, light emission can be halted promptly so that high-speed modulation is allowed.

Page 40, Paragraph 2

Q3 In the five embodiment, the impurity concentration in the base layer 504 has been adjusted to the about  $1 \times 10^{17} \text{ cm}^{-3}$ , while the impurity concentration in each of the collector layer 502 and the emitter layer 505 has been adjusted to  $1 \times 10^{18} \text{ cm}^{-3}$ .

Page 43, Paragraph 5 continuing on page 44

Q4 Although the fifth embodiment has used AlGaAs for the emitter layer 505, if GaInP is used similarly to the collector layer 502, the effect of confining carriers to the base layer 504 can be enhanced. Conversely, if AlGaAs is used for the collector layer 502, the undoped semiconductor layer 503 or the graded composition layer can be formed between the base layer 504 and the collector layer 502 in an easier fabrication process.

0819-0592-102201